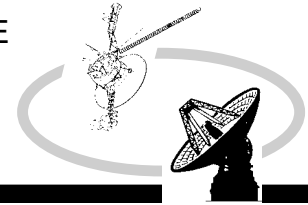




Communications Systems Analysis

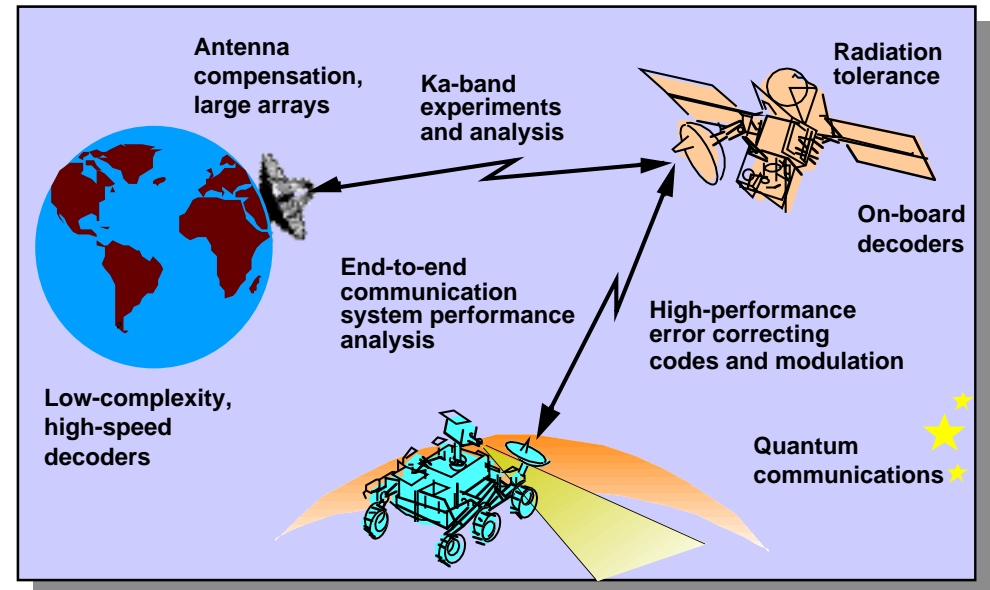


• Overall Objective

- Develop innovative information technologies and digital signal processing methods to enable future missions at lower cost and with higher scientific returns

• Goals and Products

- Develop error-correcting coding and modulation schemes for future missions. Provide new methods for telemetry data processing. Develop decoder architectures. Demonstrate coding and decoding concepts
- Develop methods for protection of on-board computations from radiation by using error detection/correction techniques
- Perform system analysis to characterize expected operational performance and evaluate technology alternatives for future deep space communications. Perform experiments to measure the advantage of Ka-band relative to X-band
- Develop and demonstrate pointing and combining algorithms for the 70-m antenna array feed compensation system
- Develop efficient signal processing algorithms for large antenna arrays
- Develop advanced telemetry receiver designs



Focus on optimizing the efficiency of telecom system to achieve higher science returns at lower cost

